

Battery Energy Storage System

# Ohms Box



# Access to energy.

Access to energy is essential for sustainable development, yet Africa faces major challenges in achieving SDG 7—“Affordable and Clean Energy for All.” With limited infrastructure for power generation and distribution, millions are left without reliable, affordable energy, stifling progress in health, education, and economic growth.

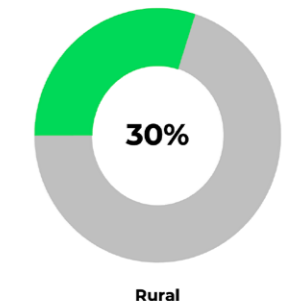
Africa’s energy challenges include limited infrastructure, funding constraints, outdated policies, reliance on fossil fuels, and a shortage of skilled professionals. While urban areas often receive priority, rural communities remain underserved, and the effects of climate change make sustainable energy even more urgent.

Transitioning to clean, renewable energy can pave the way for a brighter, sustainable future for Africa, bringing energy access and economic opportunities to every community.



## 30% Rural Energy Access

In Sub-Saharan Africa, only 30% of the rural population has access to energy, compared to 81% in urban areas, highlighting a significant disparity in energy availability.



**„747 Mio. people worldwide without access to electricity 2023.“**

In 2023, 747 million people worldwide lack access to energy, with a staggering 600 million from Sub-Saharan Africa alone. This energy poverty hinders progress and opportunities, highlighting the urgent need for innovative solutions and investment in sustainable energy access.

## Need for reliable power solutions

Many rural areas or small businesses rely on diesel generators, which are costly, environmentally unsustainable, and logistically difficult to maintain.





# Applications.

Off-Grid Europe's Ohms Box Battery Energy Storage Systems (BESS) offer a versatile solution for managing and storing renewable energy. Whether for commercial, industrial, or residential use, our BESS ensures reliable power supply, even during peak demand or power outages.

## Commercial & Industry



### Public sectors

Public sectors enhance sustainability, reduce carbon footprints, and ensure reliable power for critical infrastructure with grid-compatible solutions, benefiting communities and the environment.



### Industrial Manufacturing

Bringing tailored efficiency and reliability to industrial manufacturing, ensuring uninterrupted operations and optimized energy usage.

## Infrastructure



### Grid Services

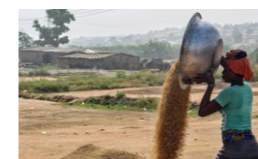
Contributing to grid services by providing flexibility, resilience, and responsiveness to dynamic energy demands, ensuring a sustainable energy future.



### Rural Communities

Benefiting from reliable, sustainable, and cost-saving energy solutions, improving quality of life and economic opportunities.

## Agriculture



### Agriculture processing plants

In agriculture, reliable power is crucial for African farmers, and a BESS ensures consistent energy for irrigation, processing, and storage, supporting sustainable farming.



# Ohms Box.

The Ohms Box is a compact battery energy storage system (BESS) that is designed to operate in remote and harsh conditions for extended periods of time.

The innovative swappable battery feature allows for easy exchanges without the need for specialized equipment. With its minimalist design and focus on affordability, The Ohms Box is an ideal solution for the developing market while offering easy maintenance and high performance. Its robust construction ensures durability, while real-time monitoring ensures optimal functionality.

The Ohms Box seamlessly integrates with renewable energy sources, aiding in peak shaving, load balancing, and grid support, contributing to a sustainable energy future.

## Technical specifications

- Up to 300% overload capacity
- Blackstart capabilities
- Modular Power Conversion System (increased redundancies)
- Integrated Battery Management System (module and cell level monitoring)
- ATS integration for grid and genset
- PV integration (DC or AC coupled)
- PLC based monitoring and control
- Electrical protection equipment: Fuses, MCBs, Contactors
- Integrated thermal management using industrial HVAC systems
- Safety: Fire suppression system

## Benefits



### Reliability

Built for any environment: reliable in any setting, seamless integration and reliable power.



### Fast installation

Turnkey solution for fast and safe installation.



### Scalable

Scalable units from 135 kWh up to MWh. Units work in parallel and independently.

# Overview.

Ohms Box (25)

Ohms Box (50)

Ohms Box (75)

Ohms Box (100)



## Power (PCS)



25 kVA



50 kVA



75 kVA



100 kVA

## Battery Capacity (BESS)



75 kWh  
110 kWh  
130 kWh  
165 kWh  
-



75 kWh  
110 kWh  
130 kWh  
165 kWh  
210 kWh



-  
110 kWh  
130 kWh  
165 kWh  
210 kWh



-  
-  
-  
165 kWh  
210 kWh

## Connections

Single AC connection (up to 100 kVA)

A second or third AC connection can be added

## Size

2000\*1600\*2200 mm



**“At Off-Grid Europe, we are committed to innovation, constantly optimizing our technology to combat energy poverty. With our work, we strive to uplift the lives of millions of people.”**

Christiane Kragh, CEO

# Who we are.

Off-Grid Europe (OGE) was founded in 2010 by Mark Kragh and Christiane Kragh. The company developed into a provider of complex technical energy solutions. OGE provides customers with end-to-end renewable energy solutions.

OGE specializes in PV (Photovoltaics) and BESS (Battery Energy Storage Systems) and works across a wide spectrum from system design and planning to system procurement and construction. The company's proprietary intelligent software solution, the Off-Grid Controller, provides efficient energy monitoring and control.

Since 2020, OGE is part of the rural electrification project ASER300 in Senegal. In the course of realizing this project, OGE founded its Senegalese subsidiary Off-Grid Africa. Together, the two companies are making an important contribution to the electrification of rural regions in Senegal and beyond.

By providing competitively priced, easy to maintain and scalable energy systems, OGE strives to create a positive impact on the environment, local economy and uplift the lives of millions of people.

Innovation is at the heart of OGE. They recently launched Ohms Box, a compact BESS that can be used to generate electricity in off-grid regions and in harsh conditions, even for MW-sized installations.

Additionally, the company developed a solar powered cooling hall: Much Cooler to combat post harvest loss which is still a huge issue on the African continent. With 100% solar power and battery storage, farmers can store and cool their harvest. This solution contributes to nutrition security, price stability and food quality in Africa.



Christiane Kragh  
CEO and co-founder



Mark Kragh  
CTO and co-founder



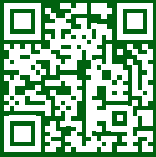
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